

THE PLANT COMMUNITIES OF EDWARDS AFB

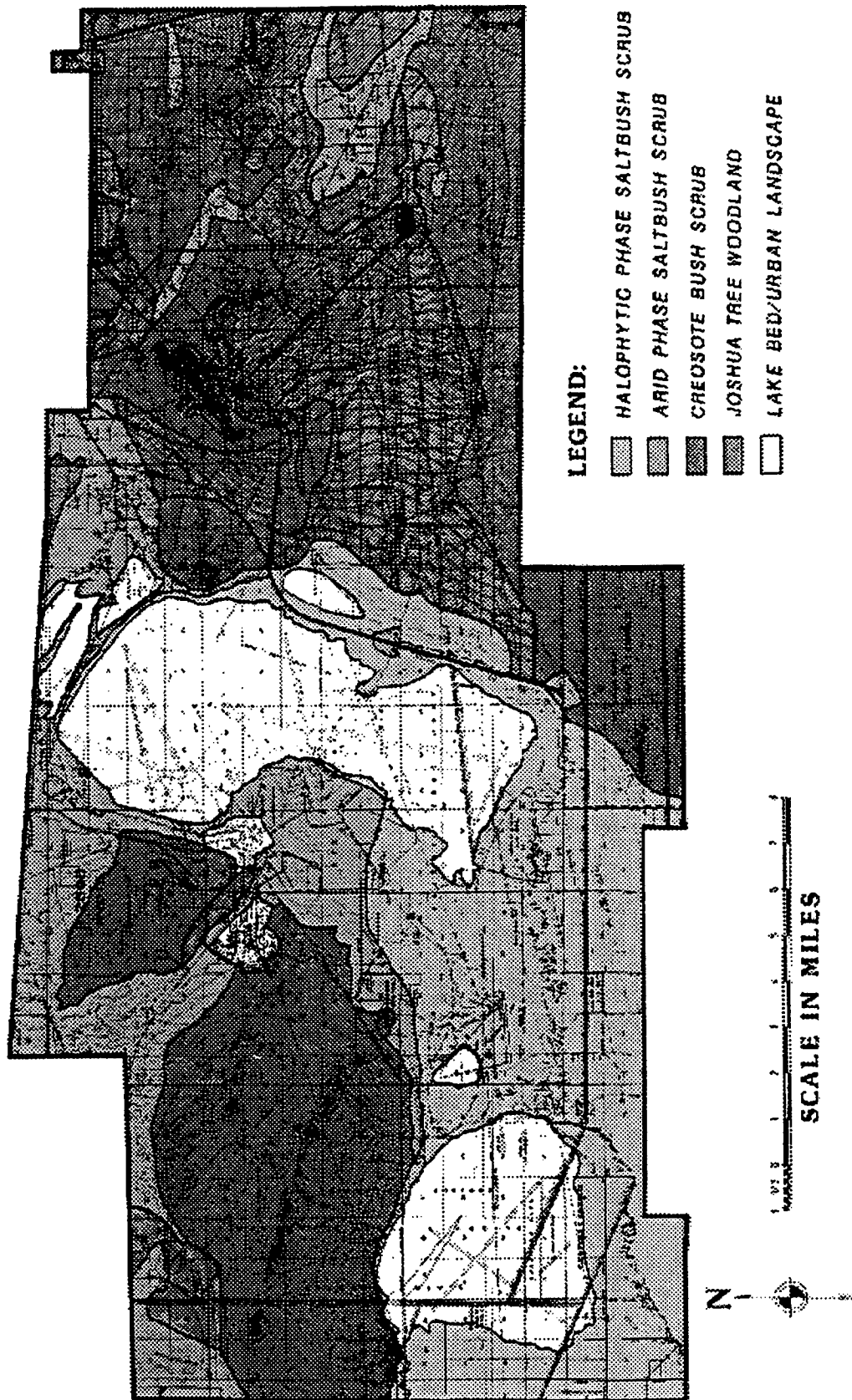


Figure 3.1-2. EAFB Vegetation Map

Rogers Dry Lake in the eastern portion of the site. Naturally revegetated, disturbed areas are relatively frequent, most probably being associated with activities dating from the 1940's or 1950's. (EAFB 1992)

NASA-North Base Site: The site is dominated by an arid phase of saltbush scrub, but with a shrub cover more strongly dominated by Mojave saltbush (*Atriplex spinifera*) and with fewer associated scrubs than the three Southern sites. Shrubs are nearly absent from the adjacent playa area, except where areas have been disturbed (e.g., by trenching) or where soil has accumulated a few centimeters (inches) above the prevailing elevation of the playa. Scattered creosote bushes are also present. (EAFB 1992)

Phillips Laboratory: PL is an existing facility on Leuhman Ridge in the northeastern portion of EAFB. The ridge, which includes rock outcrops and creosotebush scrub habitat with relatively extensive Joshua tree cover, has been extensively developed for engine testing and related activities. (EAFB 1992)

Main Base Rail Spur Alignment: Vegetation is predominantly saltbush scrub similar to that found on the Western Site. Vegetation is sparse near the northern end of the alignment. The alignment crosses one area where native vegetative cover has been previously removed and recently reseeded in an attempt to reestablish native plants. West of this area, where alignment parallels Wolfe Avenue, native vegetative cover is relatively undisturbed saltbush scrub dominated by allscale (*Atriplex polycarpa*). Immediately north of Wolfe Avenue is a broad, recently cleared area. South of Wolfe Avenue, the spur parallels Lancaster Boulevard and runs through relatively homogeneous saltbush scrub dominated by allscale and Mojave saltbush (*Atriplex spinifera*). Numerous claypans associated with a low gradient drainageway and scattered plants of Torrey's sea blite (*Suaeda torreyana*), a halophytic shrub not found elsewhere on the rail spur alignment, are found in the area. (EAFB 1992)

Rosamond Boulevard Rail Spur Alignment: A variety of vegetation and soil types are found in this area. From its origin near the junction of Lancaster and Rosamond Boulevards, the rail spur passes through creosote bush scrub dominated by creosote bush (*Larrea tridentata*) and white bur-sage (*Ambrosia dumosa*). Scattered Joshua trees (*Yucca brevifolia*) are also present. Rings of Cooper desert thorn (*Lycium cooperi*) and Anderson desert thorn (*Lycium andersonii*) ranging in diameter up to about 6 m (20 ft) are an unusual feature that is prevalent. Creosote bush scrub reaches its lower elevational limit abruptly at about Mojave Boulevard, leaving a sparse shrub community on sandy soils dominated by cheesebush (*Hymenoclea salsola*), which gives way to saltbush scrub dominated by *Atriplex polycarpa* on finer textured soils near Rosamond Boulevard. This community continues southward to Wolfe Avenue where the alignment merges with the Main Base rail spur alignment. (EAFB 1992)

Wetlands and Floodplains

EAFB contains numerous playas, pools, clay pans, and several springs. Although most of these areas have not been delineated as jurisdictional wetlands by the U.S. Army Corps of Engineers

(COE), many of them serve as biological wetlands. These areas support freshwater shrimp, hydrophytic plants, waterfowl, and shorebirds, as well as provide watering areas for large mammals. In the southwest area of the base between Rosamond Dry Lake and Rogers Dry Lake, a continuum of larger playas exists, containing several smaller dry lakebeds. The area northeast of Rogers Dry Lake and west of Rich Road also contains many larger playas and lakebeds. These areas, combined with the lakebeds, form a band that extends across the base from Piute Ponds in the southwest corner to the northern base boundary west of Rich Road. Smaller isolated playas and clay ponds are found in nearly all other areas of the base as well. (EAFB 1994-A)

A flood study conducted in 1992 by GRW Engineers identified 100 year floodplains that encompassed Rogers, Rosamond and Buckhorn dry lakes and the immediately surrounding areas, as well as the area along Mojave Creek. Flooding has also been known to occur in some low lying areas of the Main Base. All of the proposed takeoff sites are near, but not inside, the 100 year floodplain. (EAFB 1994-A)

Wildlife

South Base Site, Spaceport 2000 Sites 1 and 2: Common mammals known or expected to occur include: the black-tailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*), and kit fox (*Vulpes macrotis*), which utilize all habitat types of the area except those substantially altered by human activity. The antelope ground squirrel (*Ammospermophilus leucurus*), Merriam's kangaroo rat (*Dipodomys merriami*), southern grasshopper mouse (*Onychomys torridus*), and little pocket mouse (*Perognathus longimembris*) occur in saltbush scrub with loose, sandy soils. Pallid bats (*Antrozous pallidus*) and western mastiff bats (*Eumops perotis*) are also found in the area. (EAFB 1992)

Indigenous birds include: the common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), loggerhead shrike (*Lanius ludovicianus*), mourning dove (*Zenaida macroura*), quail (*Callypepla californica* sp.), greater roadrunner (*Geococcyx californianus*), lesser nighthawk (*Chordeiles acutipennis*), Say's phoebe (*Sayornis saya*), thrasher (*Toxostoma* sp. including LeConte's thrasher [*Toxostoma kecontei*] and Bendire's thrasher [*Toxostoma bendirei*]), white-crowned sparrow (*Zonotrichia leucophrys*), and song sparrow (*Melospiza melodia*). Raptors such as the red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), American kestrel (*Falco sparverius*), barn owl (*Tyto alba*), and great horned owl (*Bubo virginianus*) are likely to forage in the desert scrub. The rock dove (*Columba livia*), barn owl, and house finch (*Carpodacus mexicanus*) are associated with developed areas in the vicinity. The golden eagle (*Aquila chrysaetos*) also occurs during migration seasons. Burrowing owls (*Athene cunicularia*) may nest within the area. (EAFB 1992)

Reptiles are abundant. Resident species include: the side-blotched lizard (*Uta stansburiana*), California whiptail (*Cnemidophorus tigris*), zebra-tailed lizard (*Callisaurus draconoides*), desert spiny lizard (*Sceloporus magister*), desert horned lizard (*Phrynosoma platyrhinos*), long-nosed leopard lizard (*Gambelia wislizenii*), western patch-nosed snake (*Salvadora hexalepis*), Mohave

rattlesnake (*Crotalus scutulatus*), and western shovel-nosed snake (*Chionactis occipitalis*). (EAFB 1992)

Scattered mesquite and Joshua trees present on the three Southern sites are a locally important resource to wildlife.

NASA-North Base Site: Wildlife species composition is very similar to that of the three Southern sites.

Phillips Laboratory: Wildlife at PL includes many of the same species as the three Southern sites. Bobcats (*Felis rufus*), prairie falcons (*Falco mexicanus*), and rock wrens (*Salpinctes obsoletus*) also occur. (EAFB 1992)

Main Base Rail Spur Alignment: Wildlife within the Main Base rail spur alignment is similar to that described for saltbush scrub habitats of the three Southern sites. (EAFB 1992)

Rosamond Boulevard Rail Spur Alignment: Wildlife species composition is similar to that of the three Southern sites. Antelope ground squirrel, jackrabbits, and cottontail rabbits, along with abundant small rodent signs, have been observed. Creosote and Joshua trees provide habitat for several observed bird species such as western kingbirds, sage sparrows, and LeConte's thrasher. (EAFB 1992)

Reptiles are abundant and of the same species as those described for the three Southern sites. (EAFB 1992)

3.1.1.5 Threatened, Endangered, and Sensitive Species

A portion of EAFB has been designated by the U.S. Fish and Wildlife Service (USFWS) as critical habitat for the desert tortoise, a federal and state threatened species. Parts of the base that have been affected by this action include the eastern part of the Precision Impact Range Area (PIRA), portions of PL, and the Complex One Charlie area in the extreme southern section of the base.

During 1992-1993, relative density transects indicated that desert tortoise density within the area of critical habitat averaged greater than 15 tortoises per 2.6 sq km (1 sq mi). The southeast portion of the base appears to support the highest densities, with an additional area of relatively high density habitat in the northeast. Rosamond Hills and Bissell Hills in the northwest portion of the base also appear to harbor relatively high numbers of tortoises. The saltbush scrub, which dominates the southwest and central areas, appears to be the least productive area for the species, with 0-6 per 2.6 sq km (1 sq mi). (EAFB 1994-A, DFRC 1996)

The Mojave ground squirrel, a state listed threatened species and Category 2 species under review by USFWS for federal listing as threatened or endangered, occurs in several areas. Potential habitat is available on much of EAFB. The area between Buckhorn Dry Lake and Mercury Boulevard,

south of Rogers Dry Lake, supports the highest relative abundance of the species, but it appears in varying abundance throughout much of the less developed areas. (EAFB 1994-A, DFRC 1996)

No federal or state listed threatened or endangered plants have been found on EAFB, but eight plant species listed by the California Native Plant Society (CNPS) have been identified. (EAFB 1994-A, DFRC 1996)

For a complete listing of threatened, endangered, and sensitive species see Appendix B.

3.1.1.6 Cultural Resources

Approximately 800 historic sites have been recorded on EAFB. Sites include trash scatters, town sites, homesteads, agricultural features, ranching features, mines and mining camps, railroad-related features, military structures and features, and historic rock features. The northern portion of Rogers Dry Lake has been designated as a National Historic Landmark for its involvement in the Manned Space Flight Program. (EAFB 1994-A)

Native American cultural resources include burial and cremation sites. Consultation with the State Historic Preservation Office (SHPO) and tribal groups will be conducted to determine if these sites are sensitive resources. Responses will be provided in the X-33 EA-II. (EAFB 1994-A)

Approximately 580 prehistoric sites (areas containing resources resulting from human activities that predate written records) have been recorded. Site types include villages, temporary camps, rockshelters, milling stations, lithic scatters, quarries, cremations, rock features, hearths, rock art, and bone scatters. Approximately 30 sites have been formally evaluated for eligibility to the National Register of Historic Places (NRHP). About 12 sites have been recommended as NRHP eligible, and the California SHPO has concurred with the recommendations. (EAFB 1994-A)

3.1.1.7 Water Resources

EAFB is located in a basin that is essentially closed with respect to both surface drainage and groundwater movement. Most of the precipitation of the region falls in the higher elevations to the west and south. In time the water is carried by subsurface and surface flow from those areas to the lower elevations. Much of this water evaporates or infiltrates the ground. Average annual rainfall is 13 cm (5 in). There are no perennial streams on or near the base. No natural ponds exist, and lakebeds are dry except during rainy seasons. Lakebeds and normally dry stream channels may be subject to flooding after an unusually heavy storm. Groundwater resources are supplemented with water supplied by the Antelope Valley East Kern (AVEK) Water District through a state water project. Water table levels have declined due to groundwater overdrafting for the last 40 years. (EAFB 1992)

Major surface water features are three dry lakebeds (Rogers Dry Lake, Rosamond Dry Lake, and Buckhorn Dry Lake), portions of the claypan system, and several manmade lakes and ponds, many of which are part of wastewater and stormwater holding treatment facilities. (EAFB 1992)